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PCT Application  
PCT/JP2003/003759

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Translation

Applicant's or agent's file reference E06011USPCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/003759	International filing date (day/month/year) 26 March 2003 (26.03.2003)	Priority date (day/month/year) 27 March 2002 (27.03.2002)
International Patent Classification (IPC) or national classification and IPC C03C 3/06, C03B 20/00		
Applicant JAPAN SCIENCE AND TECHNOLOGY AGENCY		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 24 October 2003 (24.10.2003)	Date of completion of this report 26 November 2003 (26.11.2003)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP2003/003759

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
pages \_\_\_\_\_, 2, 5-10 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, 1, 3, 4 \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages \_\_\_\_\_, 3 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, 1, 2 \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/J 03/03759

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-3	YES
	Claims		NO
Inventive step (IS)	Claims	1-3	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-3	YES
	Claims		NO

### 2. Citations and explanations

#### Documents cited in the international search report

1. JP 2001-180962 A (Asahi Glass Co., Ltd.), 3 July 2001
2. JP 9-241030 A (Shin-Etsu Quartz Products Co., Ltd.), 16 September 1997
3. JP 2001-72428 A (Asahi Glass Co., Ltd.), 21 March 2001
4. EP 1084995 A1 (Heraeus Quarzglas GmbH & Co. KG), 21 March 2001
5. JP 2000-239040 A (Shin-Etsu Quartz Products Co., Ltd.), 5 September 2000
6. EP 870737 A1 (Shin-Etsu Quartz Products Co., Ltd.), 14 October 1998
7. JP 2001-311801 A (Asahi Glass Co., Ltd.), 9 November 2001
8. Hideo Hosono, "Fusso bunshi 'excimer laser' (157 nm)-you 'silica glass', Oyo Butsuri, 10 April 2000, vol. 69, no. 4, pp. 415-419

#### Claims 1-3 involve an inventive step

Document 1 discloses synthetic quartz glass which can be employed for illumination with ultraviolet light of a wavelength of 150-200 nm, wherein the OH group concentration in the synthetic quartz glass is 10 ppm or

less, the hydrogen atom concentration is less than  $1 \times 10^{17}$  atoms/cm<sup>3</sup> and it substantially does not include reduction type defects, and the change in the coefficient of absorption in the wavelength range 150-200 nm after shining ultraviolet light of wavelength 172 nm at 10 W/cm<sup>2</sup> for 10 kJ/cm<sup>2</sup> is 0.2 cm<sup>-1</sup> or less. An example also presents glass in which the OH group concentration is <0.2 ppm. However, document 1 does not disclose the feature whereby, in glass having an OH group concentration of 1 ppm or less, it is possible to lower the decrease in transmittance due to the presence an absorption band centring on 180 nm due to NBOHC, by making the concentration of oxygen excess type defects extremely low at  $1 \times 10^{16}$ /cm<sup>3</sup> or less. This feature is likewise not disclosed in documents 2-8, and is not such as could be deduced easily by a person skilled in the art from this prior art.